

Research Proposal

BMP Maintenance Schedules

Problem Title. What levels and types of maintenance on structural BMPs are needed to ensure consistently effective water quality and flow control performance?

Problem Statement. Historically, the maintenance of stormwater BMPs, including such activities as removing excess sediment, revegetating ditches and embankments, trash removal, etc. has occurred sporadically and inconsistently across and between the maintenance areas throughout the state. Generally stormwater conveyances and BMPs are maintained only when their hydraulic conveyance function is impaired enough to threaten the structural integrity of the highway or impair roadway safety. Some in the regulatory community have implied that the water quality and storage functions of stormwater systems may be impaired because of the lack of routine, scheduled maintenance. This can sometimes lead to implications of harm to aquatic resources although there is little evidence to make definitive conclusions as to the adequacy of any BMP maintenance program.

Literature Search. Historically, BMP maintenance guidelines in various stormwater BMP guidance documents were based mostly on regulatory judgment or back-of-envelope calculations of sediment accumulation, rather than empirical data. WSDOT is currently monitoring the sediment build-up in a BaySaver® unit in Port Angeles to evaluate maintenance requirements. Through an EPA contract, the Center for Watershed Protection is working on producing a *Stormwater BMP Maintenance Guidebook*, which may improve the knowledge base on BMP maintenance. See the following web site relating to this effort:

http://www.cwp.org/Maintenance_0702.htm

Research Methods. Review applicable technical literature as it becomes available. As part of future experimental BMP monitoring studies, annual visual inspections of maintenance needs should occur. In the upcoming restart of Ecology Embankment monitoring on SR 167, the Ecology Mix media will be evaluated for alkalinity loss and permeability loss as part of the conditions for general use through Ecology's TAPE committee. This may require annual samples for analysis.

Partnering Opportunities. Low nationally. There may be some local interest, mainly for small footprint, vault-contained BMPs that have relatively small storage capacities.

Estimate of Costs and Research Duration. Estimated costs have not been developed, but are expected to be between \$50,000 and \$100,000.

Urgency, Payoff Potential, and Implementation. This may be an issue in the next NPDES municipal permit.

Research Proposer

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Research Monitor (to be assigned, as needed, by the research program administrator)

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